



## U74AHC2G126

CMOS IC

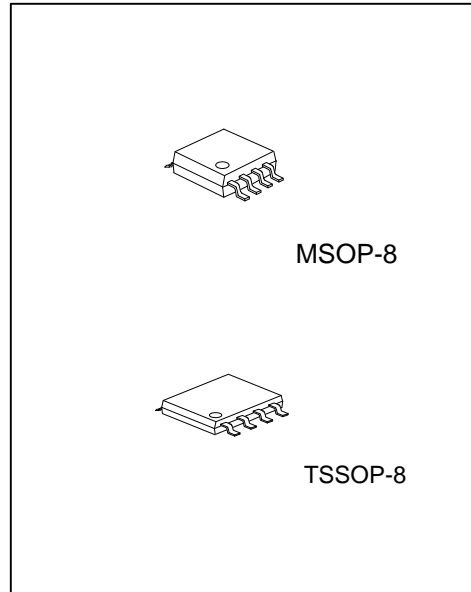
### DUAL BUS BUFFER GATE WITH 3-STATE OUTPUTS

#### DESCRIPTION

The **U74AHC2G126** consists of two bus buffers with 3-state output controlled by enable input (nOE), when nOE is low, the output is disable.

#### FEATURES

- \* Wide supply voltage range from 2.0V to 5.5V
- \* Low static power consumption;  $I_{CC}=2\mu A$  (Max.)
- \*  $\pm 8mA$  output driver at 5V



#### ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74AHC2G126L-P08-R	U74AHC2G126G-P08-R	TSSOP-8	Tape Reel
U74AHC2G126L-SM1-R	U74AHC2G126G-SM1-R	MSOP-8	Tape Reel

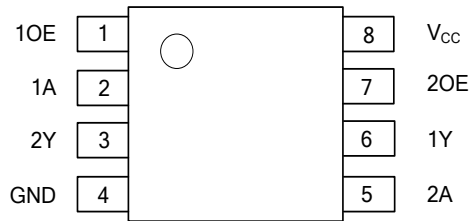
<p>U74AHC2G126G-P08-R</p> <pre>                 (1)Packing Type                 (2)Package Type                 (3)Green Package     </pre>	<p>(1) R: Tape Reel</p> <p>(2) P08: TSSOP-8, SM1: MSOP-8</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING

MSOP-8	TSSOP-8
<p>8 7 6 5 → Date Code            UTC □□□□            L: Lead Free            AHC2G126□            G: Halogen Free            □□ → Lot Code            1 2 3 4</p>	<p>8 → Date Code            7 → L: Lead Free            6 → 1126            5 → G: Halogen Free            4 → Lot Code            1 2 3</p>



## ■ PIN CONFIGURATION

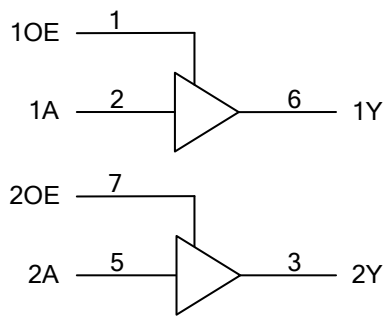


## ■ FUNCTION TABLE

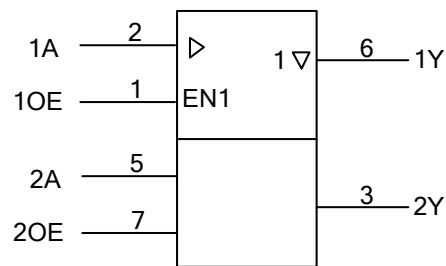
INPUT(OE)	INPUT(A)	OUTPUT(Y)
H	L	L
H	H	H
L	X	Z

Note: H: High voltage level; L: Low voltage level; Z: High impedance; X: Don't care

## ■ LOGIC DIAGRAM (positive logic)



Logic symbol



IEC Logic symbol

## ■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	CONDITIONS	RATINGS	UNIT
Supply Voltage	$V_{CC}$		-0.5 ~ +7.0	V
Input Voltage	$V_{IN}$		-0.5 ~ +7.0	V
Output Voltage	$V_{OUT}$		-0.5 ~ $V_{CC} + 0.5$	V
Continuous $V_{CC}$ or GND Current	$I_{CC}$		50	mA
Continuous Output Current	$I_{OUT}$	$V_{OUT}=0V \sim V_{CC}$	$\pm 25$	mA
Input Clamp Current	$I_{IK}$	$V_{IN} < 0V$	-20	mA
Output Clamp Current	$I_{OK}$	$V_{OUT} > V_{CC}$ or $V_{OUT} < 0V$	$\pm 20$	mA
Storage Temperature Range	$T_{STG}$		-65 ~ +150	$^{\circ}C$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

## ■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	$V_{CC}$	Operating	2.0		5.5	V
		Data retention only	1.5			V
Input Voltage	$V_{IN}$		0		5.5	V
Output Voltage	$V_{OUT}$	High or low state	0		$V_{CC}$	V
Operating Temperature (Note)	$T_A$		-40		125	$^{\circ}C$
Input Transition Rise or Fall Rate	$\Delta t/\Delta v$	$V_{CC}=3.3V \pm 0.3V$			100	ns/V
		$V_{CC}=5V \pm 0.5V$			20	ns/V

Note: This condition is only determined from design. It can't be 100% tested in mass production.

## ■ ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
High-level Input Voltage	$V_{IH}$	$V_{CC}=2.0V$	1.5			V	
		$V_{CC}=3.0V$	2.1			V	
		$V_{CC}=5.5V$	3.85			V	
Low-level Input Voltage	$V_{IL}$	$V_{CC}=2.0V$			0.5	V	
		$V_{CC}=3.0V$			0.9	V	
		$V_{CC}=5.5V$			1.65	V	
High-Level Output Voltage	$V_{OH}$	$V_{CC}=2.0V$	1.9	2		V	
		$V_{CC}=3.0V$			2.9	3	V
		$V_{CC}=4.5V$			4.4	4.5	V
		$V_{CC}=3.0V, I_{OH}=-4mA$	2.58		V		
		$V_{CC}=4.5V, I_{OH}=-8mA$	3.94		V		
Low-Level Output Voltage	$V_{OL}$	$V_{CC}=2.0V$			0.1	V	
		$V_{CC}=3.0V$			0.1	V	
		$V_{CC}=4.5V$			0.1	V	
		$V_{CC}=3.0V, I_{OL}=4mA$	0.36	V			
		$V_{CC}=4.5V, I_{OL}=8mA$	0.36	V			
Input Leakage Current	$I_{I(LEAK)}$	$V_{CC}=5.5V, V_{IL}=V_{CC}$ or GND			$\pm 0.1$	$\mu A$	
3-state Output OFF-state Current	$I_{OZ}$	$V_{IN}=V_{IH}$ or $V_{IL}, V_{OUT}=V_{CC}$ or GND, $V_{CC}=5.5V$			$\pm 0.25$	$\mu A$	
Quiescent Supply Current	$I_{CC}$	$V_{CC}=5.5V, V_{IN}=V_{CC}$ or GND, $I_{OUT}=0A$			2	$\mu A$	
Input Capacitance	$C_I$	$V_{CC}=5.0V, V_{IN}=V_{CC}$ or GND		2		pF	

■ **SWITCHING CHARACTERISTICS** ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

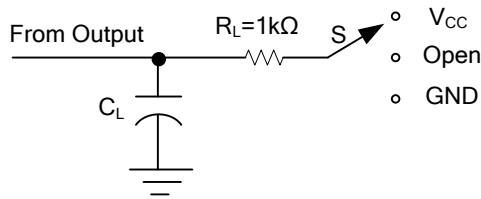
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation delay from input (A) to output(Y)	$t_{PD}$	$C_L=15\text{pF}$	$V_{CC}=3.3\pm 0.3\text{V}$		9.5	ns
			$V_{CC}=5\pm 0.5\text{V}$		6.5	ns
		$C_L=50\text{pF}$	$V_{CC}=3.3\pm 0.3\text{V}$		13	ns
			$V_{CC}=5\pm 0.5\text{V}$		8.5	ns
Propagation delay from input (OE) to output(Y)	$t_{en}$	$C_L=15\text{pF}$	$V_{CC}=3.3\pm 0.3\text{V}$		9.5	ns
			$V_{CC}=5\pm 0.5\text{V}$		6	ns
		$C_L=50\text{pF}$	$V_{CC}=3.3\pm 0.3\text{V}$		13	ns
			$V_{CC}=5\pm 0.5\text{V}$		8	ns
Propagation delay from input (OE) to output(Y)	$t_{dis}$	$C_L=15\text{pF}$	$V_{CC}=3.3\pm 0.3\text{V}$		11.5	ns
			$V_{CC}=5\pm 0.5\text{V}$		8	ns
		$C_L=50\text{pF}$	$V_{CC}=3.3\pm 0.3\text{V}$		15	ns
			$V_{CC}=5\pm 0.5\text{V}$		10	ns

■ **OPERATING CHARACTERISTICS** ( $f=10\text{MHz}$ ,  $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Power Dissipation Capacitance	$C_{PD}$	$V_{CC}=5\text{V}$ , No load.		14		pF

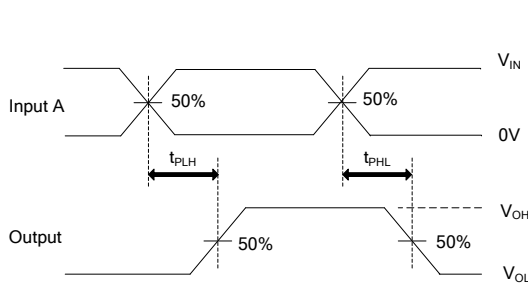
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## TEST CIRCUIT AND WAVEFORMS

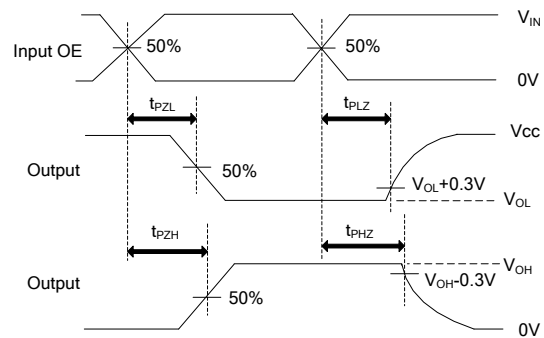


TEST CIRCUIT

TEST	S
$t_{PLH}/t_{PHL}$	Open
$t_{PLZ}/t_{PZL}$	$V_{CC}$
$t_{PHZ}/t_{PZH}$	GND



PROPAGATION DELAY TIMES



ENABLE AND DISABLE TIMES

Notes: 1.  $C_L$  includes probe and jig capacitance.

2. All input pulses are supplied by generators having the following characteristics: PRR  $\leq 10\text{MHz}$ ,  $Z_O = 50\Omega$ .

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